Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

DRAFT
Conditional Major / Synthetic Minor, Operating
Permit: F-07-027
Progress Rail Services Corporation
Covington, KY 41015
June 6, 2007
D. Brian Ballard, P.E., Reviewer

SOURCE ID:	21-117-00154
SOURCE A.I. #:	2490
ACTIVITY ID:	APE20040001

SOURCE DESCRIPTION:
This facility is currently permitted under permit V-98-038, a Title V / Synthetic Minor permit and is now transitioning to a Conditional Major / Synthetic Minor Permit. The Existing Shop houses a railcar repainting process consisting of a grit blast booth and spray painting booth. The New Shop houses the cold cleaner degreaser and various insignificant activities. Permit V-98-038 was issued on January 25, 1999 as a Title V, Synthetic Minor permit. The Division received a renewal application for permit V-98-038 on July 21, 2003. The renewal application consisted of only a DEP7007AI form and cover letter. The Division received additional information on May 10, 2006. This submittal communicated that the proportion of water-based paints used at the facility had increased recently, that spray painting in the Stencil Room has been terminated and that the painting operation in the New Shop had been eliminated. As a result of these operational changes, the facility's VOC and HAP emissions were significantly lower. The May 10, 2006 submittal requested permit limits of 50 tons per year for VOC, 22.5 tons per year for combined HAPs and 9 tons per year for individual HAP. The May 10, 2006 submittal included form DEP7007M, the metal cleaning degreasers form with information regarding the cold cleaning degreaser in the New Shop. Cold cleaning degreasers were formerly listed as insignificant activities in permit V-98-038. Since this facility is located in an ozone nonattainment area, this unit is subject to 401 KAR 59:185 and has specific record keeping requirements. The cold cleaning degreaser is now listed in Section B of permit F-07-027. Finally, the May 10, 2006 submittal included a DEP7007DD form with an updated list of insignificant activities.

The Division received a notification on December 22, 2006 with updated potential to emit estimates for individual and combined HAP emissions. The potential to emit estimation technique used a maximum usage scenario based on a 48-hour week. The emissions derived from this scenario were then extrapolated to an 8,760 hours per year schedule. The submittal communicated that the greatest potential to emit for a single HAP was 6.5 tons per year and the potential to emit for combined HAPs was 19.8 tons per year. Based on these potential to emit values, the facility was not (as of January 2, 2007) and is not a major source of HAP emissions and is therefore not subject to 40 CFR 63, Subpart MMMM. The actual HAP emissions identified in semiannual compliance reports required by permit V-98-038 were significantly less than the potential to emit values specified above.

COMMENTS:
Emissions from the grit blast booth are based on a material balance by U.S Filter. The material balance shows that 1.607 percent of grit used (11,760 lb/hr total grit usage) and approximately 100 percent (92.523 lb/hr) of paint and rust removed goes through the baghouse. The maximum grit and paint/rust dust to the baghouse is 281.461 lb/hr, or lb/car since the maximum process rate is 1 railcar/hr. Twenty-five percent of inlet dust loading is PM_{10}, 98.5 percent of outlet emissions are PM_{10}. Bags are 99.6 percent efficient overall and 98.424 percent efficient (calculated from weight percents) for PM_{10}. Lead and cadmium emission factors are calculated from the average of OSHA-required tests (NIOSH 3700) for 1 year (July 1996 – June 1997). The concentrations determined from the test were 84.5 $\mu g/m^3$ Lead and 1.275 $\mu g/m^3$ Cadmium. The exhaust flow rate during the test was 26,800 cfm and process rate was 1 railcar/hr.

Emissions from the spray paint booth in the Existing Shop are determined by material balance. The Division received Material Safety Data Sheets (MSDS) for the most commonly used paints at the facility by e-mail on May 18, 2007 and May 29, 2007. Worst case emission factors were used for each color of paint. The entire content of VOC and volatile HAPs are assumed to be emitted. A maximum application rate of 20 gallons/hr for any single color of paint is used for the emission calculations. Maximum particulate emissions were estimated assuming three (3) applicators are simultaneously applying three high solids content paints. A transfer efficiency of 50 percent of solids to the part being coated was assumed. The paint booth filter was assumed to achieve 99 percent control efficiency for particulate matter (PM & PM_{10}). Based on this scenario, the paint booth would be in compliance with the mass emission standard of 401 KAR 59:010 as long as the booth filters are in place and operating efficiently.

The potential to emit from the cold cleaner degreaser in the New Shop is determined using the emission calculation technique described in Section 63.465 of 40 CFR 63 Subpart T, the data included on the DEP7007M form and the solvent MSDS from the May 10, 2006 submittal.

Emissions from aerosol painting, silicone sealant application and caulking application in the New shop are based on application rates and existing emission factors in the KYEIS. Emissions from white nonskid coating application in the New Shop are based on application rates in the KYEIS and MSDS received on May 18, 2007. Emissions from welding in the New Shop are based on welding rod use rates in the KYEIS and emission factors from AP-42, Chapter 12, Section 12.19, Tables 12.19-1 and 12.19-2 for Gas Metal Arc Welding (GMAW) for E308L electrode. Emissions from grinding in the New Shop are based on material usage rates and existing emission factors in the KYEIS.

Emissions from painting in the Stencil Room are based on existing usage rates and emission factors in the KYEIS.

Combustion emissions from liquefied petroleum gas heaters in the Existing Shop and Office/Locker Room are based on gas usage rates in the KYEIS, a heating value of 90,500 Btu/gallon and emission factors from AP-42, Chapter 1, Section 1.5, Table 1.5-1.

COMMENTS (CONTINUED):
The opacity and mass standards of 401 KAR 59:010 apply to the grit blasting booth, surface coating operations and insignificant activities which emit particulate matter.

The surface coating lines (Existing Shop, New Shop and Stencil Room) are subject to 401 KAR 59:225 due to being located in an ozone nonattainment area. The coatings as applied will contain less than 3.5 lb/gal of VOC and will therefore be exempt from the VOC control standard. Should the permittee elect to thin coatings in the future, those coatings as applied must meet the exemption criteria or else the permittee will be required to comply with the VOC control standard specified in 401 KAR 59:225, Section 3. A compliance demonstration method for determining the VOC content of a coating as applied (when thinners are used) is included in the permit.

The cold cleaner degreaser is subject to 401 KAR 59:185 due to being located in an ozone nonattainment area. The solvent used in the cold cleaner degreaser must not have a vapor pressure that exceeds one (1.0) mm Hg (0.019 psi) measured at 20ºC (68ºF) as specified in 401 KAR 59:185, Section 4(3). The permittee must adhere to the applicable record keeping requirements specified in 401 KAR 59:185, Section 4(4).

EMISSION AND OPERATING CAPS DESCRIPTION:
The surface coating lines will be required to use coatings that contain less than 3.5 lb/gal of VOC as applied in order to be exempt from the VOC control standard specified in 401 KAR 59:225, Section 3. The paint booth filters shall be in place and operating efficiently at any time coatings are being applied. Cold cleaning degreasers shall have a remote solvent reservoir, shall not use solvents with a vapor pressure greater than 1.0 mm Hg (0.019 psi) measured at 20ºC (68ºF), shall not have an open drain greater than 100 square centimeters and waste solvent shall be stored and/or properly disposed of so as to minimize evaporation. The permittee will be subject to source wide emission limits of 50 tons per consecutive twelve-month period for VOC, 22.5 tons per consecutive twelve-month period for combined HAP and 9.0 tons per consecutive twelve-month period for individual HAP.

PERIODIC MONITORING:

Emission Unit(s)	Applicable Regulation/Requirement	Monitoring Requirements
01 (Grit Blast Booth)	401 KAR 59:010	a) Calibrate, maintain and operate according to manufacturer's specifications a baghouse pressure drop monitoring device. b) Monitor and record the baghouse pressure drop once daily. c) Perform a qualitative visual emissions inspection once daily. d) Perform a maintenance inspection of the baghouse monthly. e) Adhere to special monitoring requirements as detailed in the permit during periods of deviation or malfunction.

PERIODIC MONITORING (CONTINUED):

Emission Unit(s)	Applicable Regulation/Requirement	Monitoring Requirements
02 (Spray Paint Booth – Existing Shop)	401 KAR 59:010 401 KAR 59:225	a) Calibrate, maintain and operate according to manufacturer's specifications an air flowrate monitoring device for the purpose of measuring the air flowrate through the booth filters. b) Monitor and record the air flowrate in the booth once daily. c) Perform a qualitative visual emissions inspection once daily. d) Perform a maintenance inspection of the filter banks monthly. e) Adhere to special monitoring requirements as detailed in the permit during periods of deviation or malfunction. f) Monitor solvent usage associated with the bucket parts washer daily.
03 (Cold Cleaning Degreaser – New Shop)	401 KAR 59:185	Monitor the gallons of solvent used in the degreaser monthly.

OPERATIONAL FLEXIBILITY:

The permittee may use any paint system with VOC less than 3.5 lb/gal. The VOC content of a paint system is as-applied including thinners and solvents added. The paint system and clean-up solvent must not violate the 12-month rolling total VOC and HAP emissions limits.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.